REMARKS

In reply to the Office Action dated March 1, 2005, and further to the Notice of Appeal filed September 1, 2005, reconsideration of the subject application is respectfully requested in view of the Request for Continued Examination (RCE) application filed concurrently herewith, and further in view of the amendments and remarks herein. Claims 19, 22, 61, and 63-65 are currently under examination in the Application.

Claims 19, 22, 61, and 63 remain rejected as allegedly being obvious under 35 U.S.C. § 103 over Billing-Mendel *et al.* in view of Hauser *et al.* and Ladd *et al.* More particularly, the Examiner asserts that Billing-Mendel *et al.* teach a polypeptide comprising residues 367-375 of SEQ ID NO: 113 and that Billing-Mendel *et al.* also teach a method using the polypeptide for the treatment/therapy of prostate cancer. The Examiner concludes that it would have been obvious to the skilled artisan to combine the polypeptide of Billing-Mendel *et al.* with an adjuvant such as MPL or saponin because Ladd *et al.* and Hauser *et al.* teach formulations comprising an antigen and either MPL or saponin. According to the Examiner, one of ordinary skill in the art would have been motivated to do so because Ladd *et al.* demonstrates that compositions including saponin enhance the immune response and Hauser *et al.* teaches that compositions comprising MPL have superior immunological properties and MPL is a potent inducer of Th1 when combined with antigen. Thus, according to the Examiner, there would be an advantage to combining the polypeptide of Billing-Mendel *et al.* with an adjuvant such as MPL or saponin to increase the immune response to the polypeptide, thereby enhancing the treatment of prostate cancer.

Applicants respectfully traverse this rejection. Billing-Mendel *et al.* describe a polypeptide sharing identity with residues 299-529 of SEQ ID NO: 113. Billing-Mendel *et al.* further describe antibodies specific for their disclosed sequence and methods for making such antibodies. Billing-Mendel *et al.* do not, however, offer any teaching or suggestion whatsoever that their disclosed polypeptide is a human T-cell immunogen capable of stimulating a cytotoxic T-cell response, or that the polypeptide could or should be administered to an organism for a therapeutic purpose. While Applicants acknowledge that Billing-Mendel *et al.* describe a polypeptide comprising residues 367-375 of SEQ ID NO: 113, and the use of such polypeptides

as diagnostic reagents, there is no basis to the Examiner's assertion that Billing-Mendel *et al.* also teach or suggest a method involving the administration of a PS108 polypeptide to an organism for stimulating an immune response in the treatment/therapy of prostate cancer or any other condition. Rather, the disclosure of Billing-Mendel *et al.* describes the use of the PS108 polypeptide to generate antibodies, and the use of those antibodies in diagnostic and/or therapeutic embodiments.

For example, at Column 17, lines 41-67, Billing-Mendel *et al.* describe the production of PS108 polypeptides, antibodies and their uses:

> *The polynucleotides of the present invention may also have the coding sequence fused in frame to a marker sequence which allows for purification of the polypeptide of the present invention.....The present invention also provides an antibody produced by using a purified PS108 polypeptide of which at least a portion of the polypeptide is encoded by a PS108 polynucleotide selected from the polynucleotides provided herein. These antibodies may be used in the methods provided herein for the detection of PS108 antigen in test samples. The presence of PS108 antigen in the test samples is indicative of the presence of a prostate disease or condition. The antibody also may be used for therapeutic purposes, for example, in neutralizing the activity of PS108 polypeptide in conditions associated with altered or abnormal expression.*

PS108 antibodies are thus described as being useful for certain therapeutic purposes, however similar embodiments for PS108 polypeptides are not described. Similarly, at Column 33, lines 35-50, Billing-Mendel *et al.* describe how PS108 polypeptides can be used as immunogens to produce antibodies by direct injection of the polypeptide into an animal, and how these antibodies may be useful for certain therapeutic purposes (Column 25, line 64 to Column 26, line 2). Moreover, at Column 39, lines 5-54, Billing-Mendel *et al.* describe, under the heading "*In Vivo Antibody Use*", that antibodies may be administered in vivo in certain therapeutic embodiments. However, again, nowhere in the disclosure of Billing-Mendel *et al.* is there any corresponding disclosure in relation to particular therapeutic embodiments involving the administration of a PS108 polypeptide.

The Examiner concludes at page 4 of the Office Action that one of ordinary skill in the art would have been motivated to combine a polypeptide of Billing-Mendel *et al.* with an adjuvant of Hauser *et al.* and/or Ladd *et al.*, because "there would be an advantage to combining

the polypeptide of Billing-Mendel *et al.* with an adjuvant such as MPL or saponin to increase the immune response to the polypeptide, thereby enhancing the treatment of prostate cancer."

However, as set forth above, Billing-Mendel *et al.* does not stand for the propositions that PS108 polypeptides are to be administered for stimulating an immune response in the context of therapeutic embodiments. Rather, Billing-Mendel *et al.* only describes the use of PS108 polypeptides for producing antibodies, and the use of those antibodies in possible diagnostic and therapeutic embodiments.

Hauser *et al.* and/or Ladd *et al.* offer nothing to remedy the deficiencies of Billing-Mendel et al. Hauser *et al.* teach an adjuvant, small monophosphoryl lipid A (MPL), which preferentially induces a Type I response, and is thus particularly useful for enhancing a T-cell immune response. Hauser *et al.* do not teach or suggest combining a described adjuvant with a polypeptide bearing any structural relationship to SEQ ID NO: 113, much less a polypeptide selected so as to minimally comprise the specific residues 367-375 of SEQ ID NO: 113. Ladd *et al.* teach certain immunogenic peptide compositions, and that the peptides can be formulated with adjuvants, including saponins. Ladd *et al.*, however, do not teach or suggest combining a disclosed adjuvant with any polypeptide of SEQ ID NO: 113, much less a polypeptide minimally comprising residues 367-375 of SEQ ID NO: 113.

Given that PS108 polypeptide is described by Billing-Mendel *et al.* for the production of antibodies, the skilled artisan would have no logical motivation for making an immunogenic composition as claimed comprising residues 367-375 of SEQ ID NO: 113 in combination with an immunostimulant that induces a predominately Th1 response, since it is well known in the art that an immunostimulant that induces a predominately Th1 type immune response favors a cellular (T-cell-based) immune response over a humoral (antibody-based) immune response. Billing-Mendel *et al.* clearly directs the skilled artisan to stimulate a humoral immune response against PS108 for producing antibodies, but does not provide any reason or motivation to a skilled artisan for stimulating a cellular-based T cell immune response and thus fails to lead the skilled artisan to the selection an immunostimulant as claimed. In this respect, Billing-Mendel *et al.* actually leads a skilled individual away from the selection of an

immunostimulant as claimed since Billing-Mendel et al. has no concern whatsoever with the elicitation of T-cell immune responses. Reconsideration is respectfully requested.

In the Office Action, at page 5, the Examiner reiterates that Applicants' discovery of a previously unappreciated property of the polypeptide of Billing-Mendel *et al.* does not render the polypeptide patentably new to the discoverer and that products of chemical composition cannot have mutually exclusive properties. Applicants respectfully note in this regard that they are not claiming, or attempting to claim, a previously unappreciated property of the polypeptide of Billing-Mendel *et al.* Applicants are claiming compositions, not polypeptides, wherein the compositions comprise a polypeptide and further comprise an additional component, wherein the selection of the additional component would not have been obvious to the skilled artisan in view of the teachings of Billing-Mendel *et al.* either alone or in combination with Hauser *et al.* and/or Ladd *et al.* Reconsideration is respectfully requested.

Claims 64-65 stand rejected as allegedly being obvious under 35 U.S.C. § 103 over Billing Mendel *et al.* (U.S. Patent No. 6,130,043, 5/2/97), in view of Mincheff *et al.* (U.S. Patent No. 6,387,888 B1, 9/30/98), and Salgaller *et al.* (Prostate, 35(2):144-151, May 1998). Billing-Mendel *et al.* has been addressed above. According to the Examiner, Mincheff *et al.* teach antigen-presenting cells expressing a prostate cancer antigen following the introduction of DNA or RNA encoding said prostate cancer antigen. Also, according to the Examiner, Salgaller *et al.* teach the administration of GM-CSF as a systemic adjuvant with dendritic cells pulsed with prosate cancer peptides. The Examiner concludes that it would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to have produced an immunogenic composition as claimed.

Applicants respectfully traverse this rejection. The invention of claim 64, as amended, is drawn to an immunogenic composition comprising an immunostimulant which induces a predominantly Th1-type immune response and an antigen-presenting cell that expresses a polypeptide, wherein the polypeptide comprises the T-cell epitope of amino acid residues 367-375 of SEQ ID NO: 113; and wherein the polypeptide stimulates a human cytotoxic T lymphocyte response specific for SEQ ID NO: 113.

As discussed above, Billing-Mendel *et al.* fail to describe that any polypeptide according to the Applicants' claims can be used to stimulate a human T-cell response and should be used in conjunction with an immunostimulant that induces a predominately Th1-type immune response. Similarly, Mincheff *et al.* and/or Salgaller *et al.*, while describing certain immunostimulants, fail to teach or suggest that a polypeptide according to Applicants' claimed invention can be used to stimulate a human T-cell response and should be used in conjunction with an immunostimulant that induces a predominately Th1-type immune response. Thus, the deficiencies of Billing-Mendel *et al.* are not remedied by the disclosures of Mincheff *et al.* and/or Salgaller *et al.* One skilled in the art would not be motivated to make Applicants' claimed compositions without knowledge that the claimed polypeptide is capable of eliciting a human T-cell response when expressed in an antigen-presenting cell. Such disclosure is provided only by Applicants' disclosure, and is not provided Billing-Mendel *et al.*, Mincheff *et al.* and/or Salgaller *et al.* Accordingly, any alleged motivation to make the currently claimed compositions is impermissibly founded on Applicants' own disclosure, not on the prior art, and amounts to an invitation to experiment in the absence of a predictable expectation of success. Reconsideration is respectfully requested.

The Director is authorized to charge any additional fees due by way of this Amendment, or credit any overpayment, to our Deposit Account No. 19-1090.

All of the claims remaining in the application are now believed to be in condition for allowance. Favorable consideration is respectfully requested.

Respectfully submitted,

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